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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/012,218	12/06/2001	Richard Fletcher	3572.1000-000	5353

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HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

EXAMINER	
BHAT, ADITYA S	
ART UNIT	**PAPER NUMBER**
2863	

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/012,218	FLETCHER, RICHARD	
	Examiner	Art Unit	
	Aditya S Bhat	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,16-38,41-52 and 56-63* is/are rejected.

7)☒ Claim(s) *14,15,39,40 and 53-55* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-13, 16-38, 41-52 and 56-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodgers et al. (USPN 6,362,737).

With regards to claim 1, Rodgers et al. (USPN 6,362,737) teaches a method of probing an object, the method comprising:

forming a reference structure comprising near-field antenna sensing elements, each sensing element having one or more characteristic frequencies of oscillation; (152; See figures 1)

generating an electromagnetic field near the sensing elements; (Col.10, line 6)

coupling electromagnetically at least one sensing element to the object via the electromagnetic field; (152, 170,172 and 103;figure 1) (Col. 9, lines 35-40) and

measuring changes in the characteristic frequencies that are caused by the coupling. (124; figure 1)

With regards to claim 2, Rodgers et al. (USPN 6,362,737) teaches determining physical parameters of the object from the measured changes in the characteristic frequencies. (Col. 10, lines 1-15)

With regards to claim 3, Rodgers et al. (USPN 6,362,737) teaches determining the presence of the object from the measured changes in the characteristic frequencies. (Col. 10, lines 1-15)

With regards to claim 4, Rodgers et al. (USPN 6,362,737) teaches determining the identity of the object from the measured changes in the characteristic frequencies. (Col. 10, lines 1-28)

With regards to claim 5, Rodgers et al. (USPN 6,362,737) teaches determining the position of the object from the measured changes in the characteristic frequencies. (Col. 8, lines 35-52)

With regards to claim 6, Rodgers et al. (USPN 6,362,737) teaches determining the orientation of the object from the measured changes in the characteristic frequencies. (Col. 9, lines 32-50)

With regards to claim 7 and 32, Rodgers et al. (USPN 6,362,737) teaches using a frequency counter. (Col.35, lines 35-42)

With regards to claim 8 and 33, Rodgers et al. (USPN 6,362,737) teaches that electromagnetic coupling is capacitive. (Col.36, lines 20-27)

With regards to claim 9 and 34, Rodgers et al. (USPN 6,362,737) teaches that the electromagnetic coupling is inductive. (Col. 11, lines 18-25)

With regards to claim 10, 11 and 35, Rodgers et al. (USPN 6,362,737) teaches coupling an oscillator to each sensing element;
coupling a multiplexer to the oscillators; and
selecting, by the multiplexer, a combination of an oscillator and a sensing element for generating the electromagnetic field. (2710 & 2228 See figure 27 & 22)

With regards to claim 12, 13 and 36, Rodgers et al. (USPN 6,362,737) teaches generating the electromagnetic field using an oscillator;
coupling a multiplexer to the oscillator and to the sensing elements; and
selecting, by the multiplexer, a sensing element for generating the electromagnetic field. (2710 & 2228 See figure 27 & 22)

With regards to claim 16 and 41, Rodgers et al. (USPN 6,362,737) teaches
coupling a multiplexer to an oscillator and to the antenna elements;
selecting, by the multiplexer, a plurality of antenna elements; and
generating an electromagnetic field using the oscillator and the selected antenna elements, the electromagnetic field being modulated to convey information to the object. (2710 & 2228 See figure 27 & 22)

With regards to claim 17,18 and 42, Rodgers et al. (USPN 6,362,737) teaches coupling a multiplexer to an oscillator and to the antenna elements;
selecting, by the multiplexer, a plurality of antenna elements; and
generating an electromagnetic field using the oscillator and the selected antenna elements, the electromagnetic field being modulated to convey information to the object. (2710 & 2228 See figure 27 & 22)

With regards to claim 19 and 44, Rodgers et al. (USPN 6,362,737) teaches coupling at least one marker with the object, the at least one marker having electromagnetic properties substantially different from the electromagnetic properties of the object, the electromagnetic properties of the at least one marker causing the changes in the characteristic frequencies, the spatial arrangement of the at least one marker enhancing the probing of the object. (Col.19, lines 43-64)

With regards to claims 20 and 21, Rodgers et al. (USPN 6,362,737) teaches coupling at least one marker with the object, the at least one marker having

electromagnetic properties substantially different from the electromagnetic properties of the object, the electromagnetic properties of the at least one marker causing the changes in the characteristic frequencies, the spatial arrangement of the at least one marker enhancing the probing of the object. (Col.19, lines 43-64)

With regards to claims 22-24, Rodgers et al. (USPN 6,362,737) teaches coupling at least one marker with the object, the at least one marker comprised of electrically conductive elements, the electromagnetic properties of the at least one marker causing the changes in the characteristic frequencies, the spatial arrangement of the at least one marker enhancing the probing of the object. (Col.19, lines 43-64)

With regards to claims 25-27, Rodgers et al. (USPN 6,362,737) teaches coupling at least one marker with the object, the at least one marker comprised of magnetically permeable elements, the electromagnetic properties of the at least one marker causing the changes in the characteristic frequencies, the spatial arrangement of the at least one marker enhancing the probing of the object. (Col.19, lines 43-64)

With regards to claim 28-30, Rodgers et al. (USPN 6,362,737) teaches coupling at least one marker with the object, the at least one marker having a dielectric constant substantially greater than the dielectric constant of the object, the electromagnetic properties of the at least one marker causing the changes in the characteristic frequencies, the spatial arrangement of the at least: one marker enhancing the probing of the object. (Col.19, lines 43-64)

With regards to claim 31, Rodgers et al. (USPN 6,362,737) teaches an apparatus for probing an object, the apparatus comprising:

a reference structure having a plurality of near-field antenna sensing elements, each sensing element having one or more characteristic frequencies of oscillation; ; (152; See figures 1)

an electromagnetic field, at least one sensing element being coupled electromagnetically to the object via the electromagnetic field; (Col.10, line 6) and

a measuring device measuring changes in the characteristic frequencies that are caused by the coupling. (124; figure 1)

With regards to claims 35-38, Rodgers et al. (USPN 6,362,737) teaches a plurality of oscillators, each oscillator being coupled to a respective sensing element; and a multiplexer coupled to the oscillators, the multiplexer selecting a combination of an oscillator and a sensing element for generating the electromagnetic field. (2710; figure 27)

With regards to claims 42 -43, Rodgers et al. (USPN 6,362,737) teaches an oscillator; and a multiplexer coupled to the oscillator and to the sensing elements, the multiplexer selecting a plurality of sensing elements, the electromagnetic field being generated using the oscillator and the selected sensing elements, the electromagnetic

field being modulated to convey information to the object. (2710 & 2228 See figure 27 & 22)

With regards to claims 44-46, Rodgers et al. (USPN 6,362,737) teaches at least one marker comprised of electrically conductive elements, the at least one marker coupled to the object, the electromagnetic properties of the at least one marker causing the changes in the characteristic frequencies, the spatial arrangement of the at least one marker enhancing the probing of the object. (Col.19, lines 42-67)

With regards to claim 47-49, Rodgers et al. (USPN 6,362,737) teaches at least one marker having electromagnetic properties substantially different from the electromagnetic properties of the object, the at least one marker coupled to the object, the electromagnetic properties of the at least one marker causing the changes in the characteristic frequencies, the spatial arrangement of the at least, one marker enhancing the probing of the object. (Col.19, lines 42-67)

With regards to claim 50-52, Rodgers et al. (USPN 6,362,737) teaches at least one marker comprised of magnetically permeable elements, the at least done marker coupled to the object, the electromagnetic properties of the at least one marker causing the changes in the characteristic frequencies, the spatial arrangement of the at least one marker enhancing the probing of the object. (Col.19, lines 42-67)

With regards to claim 56, Rodgers et al. (USPN 6,362,737) teaches an apparatus for probing an object, the apparatus comprising:

means for forming a reference structure from near-field antenna sensing elements, each sensing element having one or more characteristic frequencies of oscillation; (152; See figures 1)

means for generating an electromagnetic field near the sensing elements, at least one means for sensing being coupled electromagnetically to the object via the electromagnetic field; (152, 170,172 and 103;figure 1) (Col. 9, lines 35-40) and

means for measuring changes in the characteristic frequencies that are caused by the coupling. . (124; figure 1)

With regards to claim 57, Rodgers et al. (USPN 6,362,737) teaches a method of sensing a specified object with respect to a reference surface, the method comprising:

providing an array of near-field antenna elements in the form of electrode or coil structures, heretofore termed "sensing elements"; (Col. 34, table 5)

generating electromagnetic signals via DC or AC coupling to sensing elements having one or more characteristic frequencies of oscillation; (Col. 36, lines 22-25)

providing a means for measuring the characteristic frequencies coupling the generated electromagnetic field to the object capacitively and/or inductively via one or more sensing elements; (202;figure 2) and

measuring changes in the characteristic frequencies that are caused by the object, wherein the measured changes in characteristic frequencies are used to

determine the identity of the object having known material properties; (Col. 19, lines 42-64)

With regards to claim 58, Rodgers et al. (USPN 6,362,737) teaches a method of sensing a specified object with respect to a reference surface, the method comprising:

providing an array of near-field antenna elements in the form of electrode or coil structures, heretofore termed "sensing elements"; (Col. 34, table 5)

generating electromagnetic signals via DC or AC coupling to sensing elements having one or more characteristic frequencies of oscillation; (Col. 36, lines 22-25)

providing a means for measuring the characteristic frequencies coupling the generated electromagnetic field to the object capacitively and/or inductively via one or more sensing elements; (202;figure 2) and

measuring changes in the characteristic frequencies that are caused by the object, wherein the measured changes in characteristic frequencies are used to determine the 2dimensional orientation of the object in the plane of the sensing surface; (Col. 19, lines 42-64)

With regards to claim 59, Rodgers et al. (USPN 6,362,737) teaches a method of sensing a specified object with respect to a reference surface, the method comprising:

providing an array of near-field antenna elements in the form of electrode or coil structures, heretofore termed "sensing elements"; (Col. 34, table 5)

generating electromagnetic signals via DC or AC coupling to sensing elements having one or more characteristic frequencies of oscillation; (Col. 36, lines 22-25)

providing a means for measuring the characteristic frequencies coupling the generated electromagnetic field to the object capacitively and/or inductively via one or more sensing elements; (202;figure 2)

measuring changes in the characteristic frequencies that are caused by the object; (Col. 19, lines 42-64) and

modulating transmitted electromagnetic radiation in a manner which can be used to convey information to one or more external electronic devices receptive to the electromagnetic radiation. (Col. 19, lines 42-64)

With regards to claim 60, Rodgers et al. (USPN 6,362,737) teaches an apparatus for determining the position and orientation of a specified object with respect to a reference surface, the apparatus comprising:

a set of near-field antenna elements in the form of electrodes or coils; (202; figure 2)

a sensing array comprised of sensing elements; at least one controlled oscillator that is DC or AC coupled to the sensing elements having one or more characteristic frequencies of oscillation; (Col. 36, lines 22-25)

measuring circuitry coupled to the sensing array adapted to measure changes in one or more the characteristic frequencies; (Col. 19, lines 42-64) and

masking elements for modulating transmitted electromagnetic radiation in a manner which can be used to convey information to one or more external electronic devices receptive to the electromagnetic radiation; (Col.36, table 6)

wherein the electromagnetic radiation is coupled to the object, and the changes in one or more the characteristic frequencies is used to derive position or orientation of the object. (Col. 19, lines 42-64)

With regards to claim 61, Rodgers et al. (USPN 6,362,737) teaches an apparatus for probing an object, the apparatus comprising:

means for forming a reference structure from near-field antenna sensing elements, each sensing element having one or more characteristic frequencies of oscillation; (152; See figures 1)

means for generating an electromagnetic field near the sensing elements, at least one means for sensing being coupled electromagnetically to the object via the electromagnetic field; (152, 170,172 and 103;figure 1) (Col. 9, lines 35-40) and

means for measuring changes in the characteristic frequencies that are caused by the coupling, the measured changed used to determine the identity of the object. (124; figure 1)

With regards to claim 62, Rodgers et al. (USPN 6,362,737) teaches an apparatus for probing an object, the apparatus comprising:

means for forming a reference structure from near-field antenna sensing elements, each sensing element having one or more characteristic frequencies of oscillation; (152; See figures 1)

means for generating an electromagnetic field near the sensing elements, at least one means for sensing being coupled electromagnetically to the object via the electromagnetic field; (152, 170,172 and 103;figure 1) (Col. 9, lines 35-40) and

means for measuring changes in the characteristic frequencies that are caused by the coupling, the measured changed used to determine the orientation of the object with respect to the reference structure. (124; figure 1)

With regards to claim 63, Rodgers et al. (USPN 6,362,737) teaches an apparatus for probing an object, the apparatus comprising:

means for forming a reference structure from near-field antenna sensing elements, each sensing element having one or more characteristic frequencies of oscillation; (152; See figures 1)

means for generating an electromagnetic field near the sensing elements, at least one means for sensing being coupled electromagnetically to the object via the electromagnetic field; (152, 170,172 and 103;figure 1) (Col. 9, lines 35-40)

means for oscillation; (2710; figure 27) and

means for multiplexing coupled to means for oscillation and to the sensing elements the means for multiplexing selecting a plurality of sensing elements, the sensing elements the means for multiplexing selecting a plurality of sensing elements,

the electromagnetic field being generated using the means for oscillation and the selected sensing elements, the electric field being modulated to convey information to the object (2710; figure 27 & 228 figure 22)

Rodgers et al. (USPN 6,362,737) does not appear to teach coupling of a oscillator and a multiplexer.

However, Rodgers et al. (USPN 6,362,737) discloses both elements (figures 22 &27) but does not explicitly state that they are coupled. It would have been obvious to one having ordinary skill in the art at the time the invention was made to couple the multiplexer and oscillator, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70 C (CCPA 1950)

Claim Objections

The following is a statement of reasons for the indication of allowable subject matter: Claims 14, 15, 39 and 40, 53-55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claim1-55 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shanks et al. (USPUB 2002/0149483) teaches a method system and apparatus for communicating with a RFID tag population, Selim teaches a automatic direction finding system, Rodgers et al. (USPN 6,340,932) teaches a carrier with antenna for radio frequency identification and Mobley (USPN 4,100472) teaches a satellite tracking antenna system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S Bhat whose telephone number is 703-308-0332. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-308-5841.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Aditya S Bhat
November 6, 2003

John Barlow
Supervisory Patent Examiner
Technology Center 2600